

REMARKS/ARGUMENTS

Claim 1 has been amended to further clarify the subject matter regarded as the claimed invention. New claim 22 has been added. Thus, claims 1-22 are now pending.

In the Office Action, the Examiner rejected claims 1-21 under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,6081,665 (*Nilsen et al.*) This rejection is fully traversed below.

The present application relates to virtual machines. As such, one aspect of the invention provides a modular virtual machine. In accordance with another aspect, a plurality of jobs can run on one virtual machine. Other aspects provide a virtual machine that creates a heap in the memory for each one of the jobs. In one embodiment, a virtual machine includes a jobs manager, a class manager, and a heap manager. The heap manager can manage substantially all heaps in the memory that are created by the virtual machine while the jobs manager effectively manages a plurality of jobs (see, for example, Specification, page 3, lines 7-33).

Claim 1 pertains to a computing system that includes a processor, memory, and a virtual machine. Claim 1, recites that the virtual machine is in communication with the processor. In addition, the virtual machine is arranged to enable two or more jobs to run thereon. It should also be noted that the virtual machine is also arranged to create a heap in the memory for each job that runs on the virtual machine (claim 1).

In contrast, *Nilsen et al.* does not pertain to a virtual machine that can support two jobs. It is noted that *Nilsen et al.* pertains to a method for efficient soft real-time execution of portable byte-code computer programs. To this end, *Nilsen et al.* describes a single abstract virtual machine execution stack with multiple independent stacks in order to improve the efficiency of distinguishing memory pointers from non-pointers (*Nilsen et al.*, Abstract). However, it is respectfully submitted that *Nilsen et al.* does not teach or suggest a virtual machine arranged to enable two or more jobs to run. Thus, claim 1 is patentable over *Nilsen et al.* for at least this reason alone.

Furthermore, it is respectfully submitted that, contrary to the Examiner's assertion, *Nilsen et al.* does not teach a virtual machine also arranged to create a heap in the memory for each job that runs on the virtual machine. *Nilsen et al.* states that it is necessary to provide parameterized access to heap memory so as to facilitate

implementation of read and write barriers. (*Nilsen et al.*, Col. 20, lines 21-44.) This parameterized access to heap memory does **NOT**, however, teach or suggest creating a heap in the memory for each job that runs on the virtual machine. Thus, claim 1 is patentable over *Nilsen et al.* for this additional reason. In addition, claims that are dependent on claim 1 are patentable at least for this reason. Moreover these dependent claims recite additional features that render them patentable for additional reasons. For example, claim 5 recites that the heap manager is arranged to allow an object allocated on a first heap created by the virtual machine to be visible to a second heap created by the virtual machine. It is respectfully submitted that parameterized access to heap memory does not teach this feature.

Claim 13 also pertains to a virtual machine. Claim 13, among other things, recites a first mechanism for creating a first job and a second job such that the first job and the second job are arranged to run with respect to the virtual machine. As noted above, *Nilsen et al.* does not teach a virtual machine that supports two jobs. Thus, claim 13 is patentable over *Nilsen et al.* at least for the same reasons as discussed above with respect to claim 1. Furthermore, it is respectfully submitted that claim 13 is patentable over *Nilsen et al.* for additional reasons. One reason is that claim 13 recites a second mechanism that is arranged to provide at least one job with at least one class that is arranged to be shared between the first job and the second job. *Nilsen et al.* does not teach sharing a class in the context of the claimed invention. Instead, thread dispatching in the context of priority levels is described (*Nilsen et al.* Col. 37 and 38). This thread dispatching, however, does not teach providing at least one job with at least one class that is arranged to be shared between a first job and a second job. Still further, this thread dispatching does not teach or suggest exchanging information between the first job and the second job. Claim 13 also recites this feature. Thus, claim 13 and its dependent claims are patentable over *Nilsen et al.* for these additional reasons.

Although claim 19 is directed to a computer-implemented for executing a first application concurrently with a second application, it recites similar features as those discussed above. These features include creating first and second jobs respectively associated with first and second applications. Claim 19 also recites creating first and second heaps respectively associated with the first and second jobs. Accordingly, it is respectfully submitted that claims 19 and its dependent claims are also patentable over

Nilsen et al. for similar reasons. Thus, it is respectfully requested that the Examiner withdraw all rejections under 35 U.S.C. §102.

Based on the foregoing, it is further submitted that claims are patentably distinct over the cited art of record. Additional limitations recited in the independent claims or the dependent claims are not further discussed because the limitations discussed above are sufficient to distinguish the claimed invention from the cited art. Accordingly, Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. SUN1P270). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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